

Claims

1. A biological process for producing carotenoids which comprises cultivating a micro-organism which is capable of producing carotenoids in the presence of an inhibitor for biosynthesis of sterols from farnesyl pyrophosphate, in an aqueous nutrient medium
5 under aerobic conditions.
2. A biological process for producing carotenoids which comprises cultivating a micro-organism which is capable of producing carotenoids and belonging to the genus *Xanthophyllomyces* (*Phaffia*) in the presence of an inhibitor for biosynthesis of sterols from farnesyl pyrophosphate, a substrate for producing carotenoids in an aqueous nutrient
10 medium under aerobic conditions, and isolating the resulting carotenoids from the cells of said microorganism or from the cultured broth.
3. The process according to claim 2, wherein the microorganism is *Xanthophyllomyces dendrorhous* (*Phaffia rhodozyma*) ATCC96594.
4. The process according to claim 1 or 2, wherein the inhibitor for biosynthesis of sterols
15 from farnesyl pyrophosphate is selected from the group consisting of squalene synthase inhibitors.
5. The process according to claim 4, wherein the squalene synthase inhibitor is selected from the group consisting of ammonium ion based squalene synthase inhibitors.
6. The process according to claim 5, wherein the ammonium ion based squalene synthase
20 inhibitor is selected from the group consisting of phenoxypropylamine-type squalene synthase inhibitors.
7. The process according to claim 6, wherein the phenoxypropylamine-type squalene synthase inhibitor is selected from [3-(3-allyl-biphenyl-4-yloxy)-propyl]-isopropyl-amine, N-isopropyl-3-(4-acetamido-2-allylphenoxy) propylamine, N-methyl-N-isopropyl-3-(4-acetamide-2-allylphenoxy) propylamine, N-cyclopentyl-3-(4-acetamido-2-allylphenoxy)
25 propylamine, N-cyclobutyl-3-(4-acetamide-2-allylphenoxy) propylamine, N-isopropyl-3-(2-allyl-4-butyramidophenoxy) propylamine, N-isopropyl-3-(4-acetamido-2-chlorophenoxy) propylamine, N-isopropyl-3-(4-acetamido-2-propylphenoxy) propylamine, and N-isopropyl-3-(4-acetamido-2-allylphenoxy)-1-methylpropylamine, and biologically
30 acceptable salts thereof.
8. The process according to claim 7, wherein the phenoxypropylamine-type squalene synthase inhibitor is [3-(3-allyl-biphenyl-4-yloxy)-propyl]-isopropyl-amine, or a biologically

acceptable salt thereof, N-isopropyl-3-(4-acetamido-2-allylphenoxy) propylamine or N-methyl-N-isopropyl-3-(4-acetamide-2-allylphenoxy) propylamine.

9. The process according to claim 1 or 2, wherein the concentration of the said inhibitor is within the range that gives less than 50 % reduction of the cell growth under carotenoids
5 producing conditions.

10. The process according to claim 9, wherein the concentration of the said inhibitor is within the range that gives less than 30 % reduction of the cell growth under carotenoids producing conditions.

11. The process according to claim 1 or 2, wherein the cultivation is carried out at a pH in
10 the range from 4 to 8 and at a temperature in the range from 15 to 26 °C, for 24 to 500 hours.

12. The process according to claim 11, wherein the cultivation is carried out at a pH in the range from 5 to 7 and at a temperature in the range from 18 to 22 °C, for 48 to 350 hours.
